

REMARKS/ARGUMENTS

Claims 1-5 and 9 are pending herein. Claims 1 and 9 have been amended as supported by page 5, lines 4-12 and page 12, lines 10-15 of the present application, for example.

Examiner West is thanked for courtesies extended to Applicants' representative during a telephonic interview on March 27, 2007. During the telephonic interview, Examiner West agreed that the amendments submitted above to claims 1 and 9 overcome the 35 U.S.C. 101 rejections raised in the Office Action. Further, Examiner West agreed that claims 1 and 9 amended to specifically recite the equation for long term average jitter (lt_jitter) would overcome the prior art of record.

1. Claims 1-5 and 9 were rejected under 35 U.S.C. 101 in Section 4 of the Office Action. Claims 1 and 9 have been amended to recite the act of storing the estimated mean opinion score on a computer-readable medium accessible by a user for a visualization and analysis, and means for storing the estimated mean opinion score, respectively. Therefore, Applicants respectfully submit that claims 1-5 and 9 even more clearly recite a practical application that produces a useful, concrete and tangible result. Accordingly, reconsideration and withdrawal of the present rejection are respectfully requested.

2. Claims 1, 2 and 9 were rejected under 35 U.S.C. 103(a) over Cisco, Scott, and Bearden. To the extent that this rejection may be applied against the amended claims, it is respectfully traversed.

Claim 1 recites, in relevant part, a method of assessing speech quality comprising the steps of storing a sequence of intercepted packets associated with a call and extracting a set of parameters from the sequence of intercepted packets. The

extracting step comprises the sub steps of, in relevant part, generating a jitter parameter for each packet of the sequence of stored packets and generating a long term average jitter parameter (lt_jitter) for the stored packet in dependence upon the value of the jitter parameter (jitter) for the stored packet, the value of the jitter parameter for any preceding stored packets, and a predetermined adaptation rate (P) according to the equation: $lt_jitter = (lt_jitter * P) + (abs(jitter) * (1 - P))$.

Claim 9 recites, in relevant part, an apparatus for assessing speech quality comprising means for storing a sequence of intercepted packets associated with a call, and means for extracting a set of parameters from the sequence of intercepted packets. The means for extracting further comprises, in relevant part, means for generating a jitter parameter for each intercepted packet of the sequence of stored intercepted packets, and means of generating a long term average jitter parameter (lt_jitter) for the stored packet in dependence upon the value of the jitter parameter (jitter) for the stored intercepted packet, the value of the jitter parameter for any preceding stored intercepted packets, and a predetermined adaptation rate (P) according to the equation: $lt_jitter = (lt_jitter * P) + (abs(jitter) * (1 - P))$.

Applicants respectfully submit that an important portion of the present invention resides in the discovery that a long term average jitter parameter is a useful parameter for generating an estimated mean opinion score for assessing speech quality transmitted via a packet based telecommunications network, when the difference between the jitter of the current packet is compared to the long term average jitter (i.e., the jitter differential). Applicants respectfully submit that the recited equation for lt_jitter has been found by the inventors to be highly adaptable and robust such that the particular long term jitter value calculated using the recited equation functions especially well for assessing speech quality transmitted via a packet based telecommunications network.

Examiner West correctly asserts, in the last paragraph on page 7 of the Office Action, that Cisco does not include a method step for or a means for determining a long term average or differential jitter parameter of the extracted parameters. For the alleged disclosure of these features, the PTO relies upon Scott. Scott, however, does not overcome the deficiencies of Cisco.

Scott discloses, in column 5, lines 41-46, an equation for computing average jitter. The equation is as follows:

$$J_{ave} = \frac{(Cw[1] \times J[1] + Cw[2] \times J[2] + \dots + Cw[Ns] \times J[Ns])}{(Cw[1] + Cw[2] + \dots + Cw[Ns])}.$$

Scott discloses, in column 5, lines 44-46, that $Cw[1] \dots [Ns]$ are calculated weight coefficients that are used to give more weighting to certain packets in relation to one another within a sliding window array. In other words, each individual jitter parameter within a sliding window is assigned its own calculated weight (i.e., Cw) with respect to the other jitter parameters. As the sliding window increments to include a new packet and remove an old packet from the sliding window array, the entire calculation restarts by assigning a new value for Cw to each packet and recalculating for the solution based on all of the packets in the sliding window array. Accordingly, every new value for J_{ave} is not directly related to the previously obtained J_{ave} since at least one jitter values J is eliminated from the sliding window array and all of the remaining jitter values J have been assigned a new calculated weight Cw . Clearly, Scott fails to disclose or suggest an equation for a long term average jitter parameter that includes a percentage (P) of the previously determined long term average jitter along with the addition of a percentage $(1 - P)$ of the absolute value of the presently received jitter parameter. Therefore, Scott fails to disclose or suggest the

recited method step for or means for generating a long term average jitter parameter using the equation recited in claims 1 and 9.

Bearden, used for its alleged disclosure of generating an estimated mean opinion score fails to overcome the deficiencies of Cisco and Scott.

For at least the foregoing reasons, Applicants respectfully submit that Cisco, Scott, and Bearden fail to disclose or suggest a method step of generating a long term average jitter parameter (lt_jitter) for the stored packet in dependence upon the value of the jitter parameter ($jitter$) for the stored packet, and the value of the jitter parameter for any preceding stored packets, and a predetermined adaptation rate (P) according to the equation: $lt_jitter = (lt_jitter * P) + (abs(jitter) * (1 - P))$, as recited in claim 1.

Similarly, Applicants respectfully submit that Cisco, Scott, and Bearden fail to disclose or suggest means for generating a long term average jitter parameter (lt_jitter) for the stored packet in dependence upon the value of the jitter parameter ($jitter$) for the stored intercepted packet, the value of the jitter parameter for any preceding stored intercepted packets, and a predetermined adaptation rate (P) according to the equation: $lt_jitter = (lt_jitter * P) + (abs(jitter) * (1 - P))$, as recited in claim 9. Accordingly, the method of assessing speech quality recited in claim 1 and the apparatus for assessing speech quality recited in claim 9 would not have been obvious to one skilled in the art provided with the disclosures of Cisco, Scott, and Bearden. Since claim 2 depends directly from claim 1, claim 2 is also believed to be allowable over the applied prior art. Reconsideration and withdrawal of the present rejection are respectfully requested.

3. Claims 3-5 were rejected under 35 U.S.C. 103(a) over Cisco, Scott, and Bearden, and further in view of Carley. Applicants respectfully submit that the arguments submitted above distinguish claim 1 from Cisco, Scott, and Bearden. Carley is relied on in the Office Action for alleged disclosure of determining a

variance value of a measured parameter and a subsequent average of the minimum and/or variance value. Thus, the disclosure in Carley relied on in the Office Action fails to overcome the deficiencies of Cisco, Scott, and Bearden as attempted to be applied to claim 1, from which claims 3-5 depend. Accordingly, reconsideration and withdrawal of the present rejection are respectfully requested.

For at least the foregoing reasons, Applicants respectfully submit that all pending claims herein define patentable subject matter over the art of record. Accordingly, the PTO is requested to issue a Notice of Allowance for this application in due course.

If Examiner West believes that further contact with Applicants' attorney would be advantageous toward the disposition of this case, he herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

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Date



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